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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/774,472	02/10/2004	Yoshiaki Tatsumi	101160-00026	9149

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EXAMINER

TRAN, THAO T

ART UNIT PAPER NUMBER

1711

DATE MAILED: 10/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/774,472

Applicant(s)

TATSUMI ET AL.

Examiner

Thao T. Tran

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 August 2006 and 20 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 5-19 is/are pending in the application.
- 4a) Of the above claim(s) 7-9 and 12-17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,5,6,10,11,18 and 19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/7/2006 has been entered.
2. Claims 1-2 and 5- 19 are currently pending in this application. Claim 1 has been amended. Claims 7-9 and 12-17 have been previously withdrawn as directed to a non-elected invention.
3. Upon further consideration, the new matter as noted in the Advisory action has been withdrawn. The prior art rejections have also been withdrawn. New rejections are issued below.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 1-2 and 5-6, 10-11, and 18-19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite due to the use of "is performed" in line 6. It is unclear to the examiner which structure in the electrostatic device being performed that Applicants are referring to. If Applicants mean to indicate that there is at least a thermoplastic polyimide-based

Art Unit: 1711

adhesive film having a thickness of 5 to 50 microns between the substrate and the first insulation layer, please state so. Clear definition of the structure being performed as indicated in claim 1 is required.

Claims 18-19, each recite the limitation "bonding process" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-2, 5-6, 10-11, and 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen et al. (US Pat. 5,691,876) in view of Hisamoto et al. (US Pat. 6,027,629).

Chen teaches an electrostatic chucking device having a laminate structure; wherein the laminate comprises in sequence of a substrate 110, a first polymeric dielectric layer 124, a conductive layer 122 (electrode layer), and a second polymeric dielectric layer 114 (see abstract; Fig. 1; col. 6, ln. 35-43).

The dielectric layer 124 comprises a non-thermoplastic polyimide core layer, and two thermoplastic polyimide adhesive layers to adhere the dielectric layer to the substrate and the conductive layer. The dielectric layer 114 comprises a non-thermoplastic polyimide layer and a

Art Unit: 1711

thermoplastic polyimide adhesive layer adhering to the conductive layer (see paragraph bridging col. 7-8; col. 9, ln. 38-67; col. 10, ln. 1-5).

The thermoplastic polyimide adhesive layer can be 38.1 microns in thickness (see col. 9, ln. 38-40, 65-67) or 12.7 (see col. 11, ln. 1-2), which reads on the instantly claimed ranges.

Chen further discloses the substrate to be a conductive platen used to support a semiconductor workpiece (see abstract). Example 1 shows the conductive substrate to be stainless steel (see col. 8, ln. 47). However, Chen does not teach the substrate to be aluminum alloy.

Hisamoto discloses an electrostatic chuck comprising aluminum alloy, stainless steel, or composite material of ceramics and plastics (see paragraph bridging col. 2-3).

Therefore, it would have been obvious to one of ordinary skill in the art to have employed a substrate made of aluminum alloy in lieu of stainless steel and would have given the same effects. This is because aluminum alloy and stainless steel have been conventionally used as substrate supports for semiconductor workpieces.

It is noted that since the adhesive layer of the reference is also made of thermoplastic polyimide, it would inherently have the same properties, such as being capable of withstanding the presently claimed temperature. It is further noted that in an article claim, it is the structural or chemical elements that impart patentability, and not functional or property limitations.

Applicants are reminded to provide the structural or chemical components that impart the claimed properties in order to patentably distinguish from the prior art.

Chen does not teach the use of a siloxane-modified polyimide in the adhesive layer in the same embodiment. However, in another embodiment, Chen teaches the use of a siloxane-

Art Unit: 1711

modified polyimide layer as the adhesive layer to provide excellent adhesion of the polyimide to the metal surface (see paragraph bridging col. 10-11).

Therefore, it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have employed the siloxane-modified polyimide in the adhesive layer of the first embodiment of Chen for the purpose of improving adhesion of the polyimide layer to the substrate and the conductive layer.

Response to Arguments

8. Applicant's arguments with respect to the 102 rejections of the claims have been considered but are moot in view of the new ground(s) of rejection.

9. Applicant's arguments filed on 8/7/2006 and 4/20/2006 have been fully considered but they are not persuasive with respect to the 103 rejections of the claims.

Applicants allege that the Affidavit filed on 10/18/2005 provides proper support for the presently claimed invention. The Affidavit filed on 10/18/2005 presents Examples of Espanex to illustrate the difference between Espanex and the thermoplastic polyimide Kapton used in Chen '876. As pointed out by Applicants' arguments on page 5 of the Remarks, the present specification discloses Espanex as a "siloxane modified thermoplastic polyimide-based adhesive film which is obtained by a chemical reaction among diamino siloxane, aromatic diamine and tetracarboxylic acid dianhydrides).

Since Espanex is a specific polyimide, the data presented in the Affidavit is not commensurate with the scope of the claims. It is noted that instant claim 1 recites a thermoplastic polyimide-based adhesive film, but not the particular Espanex or a reaction product of diamino

Art Unit: 1711

siloxane, aromatic diamine and tetracarboxylic acid dianhydrides. Furthermore, the phrase “capable of withstanding low-temperature compression bonding at a temperature of 100-250°C” is a functional or property limitation. Since the adhesive film of Chen is also thermoplastic polyimide-based, it would inherently be capable of having same functions or properties as presently claimed.

10. In response to Applicants’ arguments that “the ability of the adhesive layer to withstand compression bonding at a particular temperature range is not a functional feature or even a procedural/method step feature, rather, the recited feature is an expressly stated structural characteristic of the adhesive layer”, it is emphatically noted that in an article claim, limitations on functions, properties, or characteristics would have no significant patentable weight.

Applicants are required to provide the specific structural or chemical elements imparting the claimed characteristics in order to patentably distinguish from the prior art.

11. Thus, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references. Neither do Applicant's arguments comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

Art Unit: 1711

Contact Information

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thao T. Tran whose telephone number is 571-272-1080. The examiner can normally be reached on Monday-Friday, from 9:00 a.m. - 5:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Thao T. Tran
Primary Examiner
Art Unit 1711

tt
October 20, 2006